

COPYRIGHT © 1980 BY SRI

SRI REPORT NUMBER 80-10

**Nortel Networks - Problem Manager**

**Problem List**

| Problem  | Violat | Alarms | Degrad | Cost | Time            |
|--|--------|--------|--------|------|-----------------|
| Sonet: experiencing traffic loss, receive traffic not protected  | 9      | 8      | 10     | 4    | 1/3/00 14:39:48 |
| Sonet: experiencing traffic loss, transmit traffic not protected | 9      | 12     | 7      | 5    | 1/3/00 14:24:42 |
| FR: subsystem failure, connections are down                      | 9      | 23     | 14     | 3    | 1/3/00 14:18:31 |
| ATM: logical path communication signal lost                      | 8      | 22     | 14     | 5    | 1/3/00 14:13:38 |
| Sonet: remote line has failed                                    | 4      | 8      | 6      | 5    | 1/3/00 14:11:34 |
| Switching: trunk connections are down                            | 9      | 11     | 24     | 4    | 1/3/00 14:15:09 |
| Sonet: remote line has failed                                    | 8      | 14     | 4      | 4    | 1/3/00 14:32:23 |
| ATM: logical path communication signal lost                      | 6      | 10     | 9      | 5    | 1/3/00 14:44:51 |
| Switching: trunk connections are down                            | 4      | 8      | 7      | 5    | 1/3/00 14:21:29 |
| ATM: subsystem failure, connections are down                     | 9      | 8      | 10     | 4    | 1/3/00 14:52:24 |

**Cause and Correction:** Transmit Traffic is not protected on NE 294 OC3 G1s. The near-end optical card detected a problem on its transmitted optical signal.

**Document Reference:** 432-3653-821-ubal

**Details**

Service Violations | Alarms | Performance Degradations

| Customer          | Cust. Service | Level  | Metric                 | Delivered | Agreed     | Penalty/Impact |
|-------------------|---------------|--------|------------------------|-----------|------------|----------------|
| Acura Canada      | Frame Relay   | Silver | Service Availability   | 95.2%     | > 98.5%    | \$300/sec      |
| Air Canada        | VPN           | Gold   | MTBF                   | 2 days    | < 5 days   | \$500/sec      |
| General Motors    | Megaroute     | Gold   | Latency                | 168 msec  | < 150 msec | \$80/sec       |
| Joe's Garage      | IP            | Bronze | Dial-Port Availability | 93%       | > 95%      | \$25/sec       |
| MicroCell Solut'n | AMPS Trunk    | Gold + | Service Availability   | 96.3%     | > 99.5%    | \$500/sec      |
| Microcell Solut'n | AMPS Trunk    | Gold + | Network Availability   | 98%       | > 99.9%    | \$750/sec      |
| National Post     | Frame Relay   | Gold + | Packet Loss            | 1.75%     | < 0.7%     | \$150/sec      |
| Sears Canada      | Frame Relay   | Gold   | Packet Loss            | 1.75%     | < 1%       | \$50/sec       |
| Sympatico         | IP VPN        | Gold   | MTBF                   | 2 days    | > 5 days   | \$500/sec      |

9 SLA(s) total at last refresh: 02/02/00 14:35:22

| Metric                             | Agreed    | Penalty   | Metric con't            | Agreed    | Penalty  |
|------------------------------------|-----------|-----------|-------------------------|-----------|----------|
| Mean Time to Repair (MTTR):        | < 5 hours | \$200/hr  | Dial-Port Availability: | > 95.0%   | \$25/sec |
| Mean Time Between Failures (MTBF): | > 3 days  | \$500/sec | End-to-End Latency:     | < 150msec | \$80/sec |
| Network Availability:              | 99.7%     | \$750/sec | Packet Loss:            | 99.7%     | \$50/sec |
| Service Availability:              | 99.5%     | \$500/sec | Discards:               | < 0.8%    | \$50/sec |

**Contact Information:**

Mike Bender  
 Company Name Phone: (813) - 442 - 7276 Notes:  
 732 Street St Cell: (813) - 367 - 8944  
 Ottawa, Canada Fax: (813) - 236 - 6746  
 K1k2K2 e-mail: mbender@company.com

View Contract

Fig 2

**Nortel Networks - Problem Manager**

**Problem List**

| Problem   | Violat <sup>n</sup> | Alarms        | Degrad <sup>n</sup> | Cost         | Time                       |
|---|---------------------|---------------|---------------------|--------------|----------------------------|
| Sonet: experiencing traffic loss, receive traffic not protected             | 9                   | 8             | 10                  | 4            | 1/3/00 14:39:48            |
| <del>Sonet: experiencing traffic loss, transmit traffic not protected</del> | <del>9</del>        | <del>12</del> | <del>7</del>        | <del>5</del> | <del>1/3/00 14:24:42</del> |
| FR: subsystem failure, connections are down                                 | 9                   | 23            | 14                  | 3            | 1/3/00 14:16:31            |
| ATM: logical path communication signal lost                                 | 8                   | 22            | 14                  | 5            | 1/3/00 14:13:36            |
| Sonet: remote line has failed   | 4                   | 8             | 6                   | 5            | 1/3/00 14:11:34            |
| Switching: trunk connections are down                                       | 9                   | 11            | 24                  | 4            | 1/3/00 14:15:09            |
| Sonet: remote line has failed   | 8                   | 14            | 4                   | 4            | 1/3/00 14:32:23            |
| ATM: logical path communication signal lost                                 | 6                   | 10            | 9                   | 5            | 1/3/00 14:44:51            |
| Switching: trunk connections are down                                       | 4                   | 8             | 7                   | 5            | 1/3/00 14:21:29            |
| ATM: subsystem failure, connections are down                                | 9                   | 8             | 10                  | 4            | 1/3/00 14:52:24            |

**Cause and Correction:** Transmit Traffic is not protected on NE 294 OC3 G1s. The near-end optical card detected a problem on its transmitted optical signal.

**Document Reference:** 432-3653-821-ubal

**Details**

Service Violations | Alarms | Performance Degradations

| NE Name                 | Type           | Unit                 | Reason                    | Severity             | Time                       |
|-------------------------|----------------|----------------------|---------------------------|----------------------|----------------------------|
| 1008 BoATM01            | Com            | Communi...           | Rx AIS                    | CRITICAL SA          | 1/3/00 14:50:07            |
| 1008 BoATM01            | Com            | Communi...           | commSubsystemFailure      | MAJOR SA             | 1/3/00 14:50:29            |
| 1008 BoATM01            | Com            | Cell                 | LCD                       | CRITICAL SA          | 1/3/00 14:50:04            |
| <del>1008 BoATM01</del> | <del>Com</del> | <del>Near Path</del> | <del>degradedSignal</del> | <del>minor nsa</del> | <del>1/3/00 14:50:13</del> |
| 1011 CleoATM01          | Com            | Operator             | Operational Cond          | CRITICAL SA          | 1/3/00 14:52:24            |
| 1011 CleoATM01          | Com            | Operator             | Operational Cond          | CRITICAL SA          | 1/3/00 14:52:24            |
| 1011 CleoATM01          | Com            | Communi...           | commSubsystemFailure      | MAJOR SA             | 1/3/00 14:52:43            |
| 514 CleoATM01           | Fac            | OC3 G4               | Rx AIS                    | warning nsa          | 1/3/00 14:52:32            |
| 1008 BoATM01            | Com            | Cell                 | LCD                       | CRITICAL SA          | 1/3/00 14:50:04            |
| 1008 BoATM01            | Com            | Communi...           | Rx AIS                    | CRITICAL SA          | 1/3/00 14:50:07            |
| 1008 BoATM01            | Com            | Near Path            | degradedSignal            | minor nsa            | 1/3/00 14:50:13            |
| 1008 BoATM01            | Com            | Communi...           | commSubsystemFailure      | MAJOR SA             | 1/3/00 14:50:29            |

12 Alarm(s) total at last refresh: 02/02/00 14:35:22 Refresh Now

Alarm Type: communications      Acknowledged by: liqiang      Reason: Loss of Frame. Loss of Cell deliniation has been detected. Check the cabling and configuration.

Component: Lp/2 Sonet/0 Path/0      Display: bmerhfb:0.0

Alarm: critical      Hostname: bmerhfb

Time: 1/3/00 8:43

Fig 3

Nortel Networks - Problem Manager

Problem List

| Problem  | Violat <sup>ns</sup> | Alarms <sup>ns</sup> | Degrad <sup>ns</sup> | Cost <sup>ns</sup> | Time            |
|--|----------------------|----------------------|----------------------|--------------------|-----------------|
| Sonet: experiencing traffic loss, receive traffic not protected  | 9                    | 8                    | 10                   | 4                  | 1/3/00 14:39:48 |
| Sonet: experiencing traffic loss, transmit traffic not protected | 9                    | 12                   | 7                    | 5                  | 1/3/00 14:24:42 |
| FR: subsystem failure, connections are down                      | 9                    | 23                   | 14                   | 3                  | 1/3/00 14:16:31 |
| ATM: logical path communication signal lost                      | 8                    | 22                   | 14                   | 5                  | 1/3/00 14:13:36 |
| Sonet: remote line has failed                                    | 4                    | 8                    | 6                    | 5                  | 1/3/00 14:11:34 |
| Switching: trunk connections are down                            | 9                    | 11                   | 24                   | 4                  | 1/3/00 14:15:08 |
| Sonet: remote line has failed                                    | 8                    | 14                   | 4                    | 4                  | 1/3/00 14:32:23 |
| ATM: logical path communication signal lost                      | 8                    | 10                   | 9                    | 5                  | 1/3/00 14:44:51 |
| Switching: trunk connections are down                            | 4                    | 8                    | 7                    | 5                  | 1/3/00 14:21:29 |
| ATM: subsystem failure, connections are down                     | 9                    | 8                    | 10                   | 4                  | 1/3/00 14:52:24 |

Cause and Correction: Transmit Traffic is not protected on NE 294 OC3 G1s. The near-end optical card detected a problem on its transmitted optical signal.

Document Reference: 432-3853-821-ubal

Details

Service Violations | Alarms | Performance Degradations

| NE Name        | Unit      | Metric             | Actual | Threshold | Network Service | Time            |
|----------------|-----------|--------------------|--------|-----------|-----------------|-----------------|
| Blue-HawkRTR   | cli-ab    | BECN               | 592    | 815       | Frame Relay     | 1/3/00 14:51:55 |
| 321 TerranceTN | DS1 G10 2 | Line Rx ES         | 900    | 800       | Sonet Backbone  | 1/3/00 9:15:01  |
| 562 BallyRTR   | cli-ac    | Marginal Call Rate | 10%    | 10%       | VoIP            | 1/3/00 14:13:23 |
| 352 JaneRTR    | cli-ad    | Unaccept Call Rate | 3%     | 4%        | VoIP            | 1/3/00 14:52:12 |
| 474 BankRTR    | cli-aa    | Unaccept Call Rate | 7%     | 7%        | VoIP            | 1/3/00 10:37:42 |
| 241 RockTN     | DS1 G10 2 | Line Rx ES         | 900    | 800       | Frame Relay Ch. | 1/3/00 9:16:43  |
| 352 UpsideRTR  | cli-ad    | Unaccept Call Rate | 3%     | 4%        | VoIP            | 1/3/00 9:16:49  |

7 Performance Degradation(s) total at last refresh: 02/02/00 14:35:22

Performance Degradation Graphical Details:

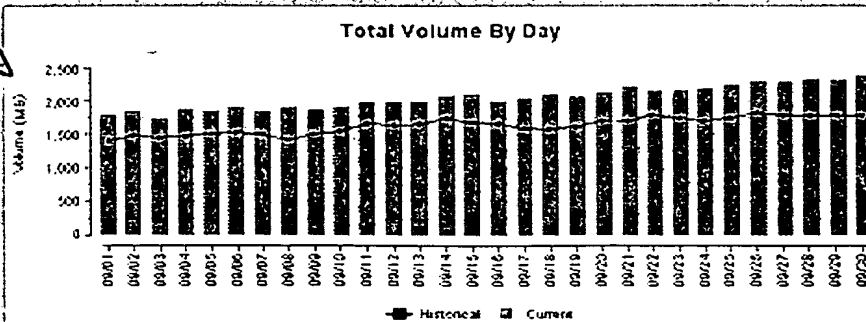


Fig 4

00120-00000000

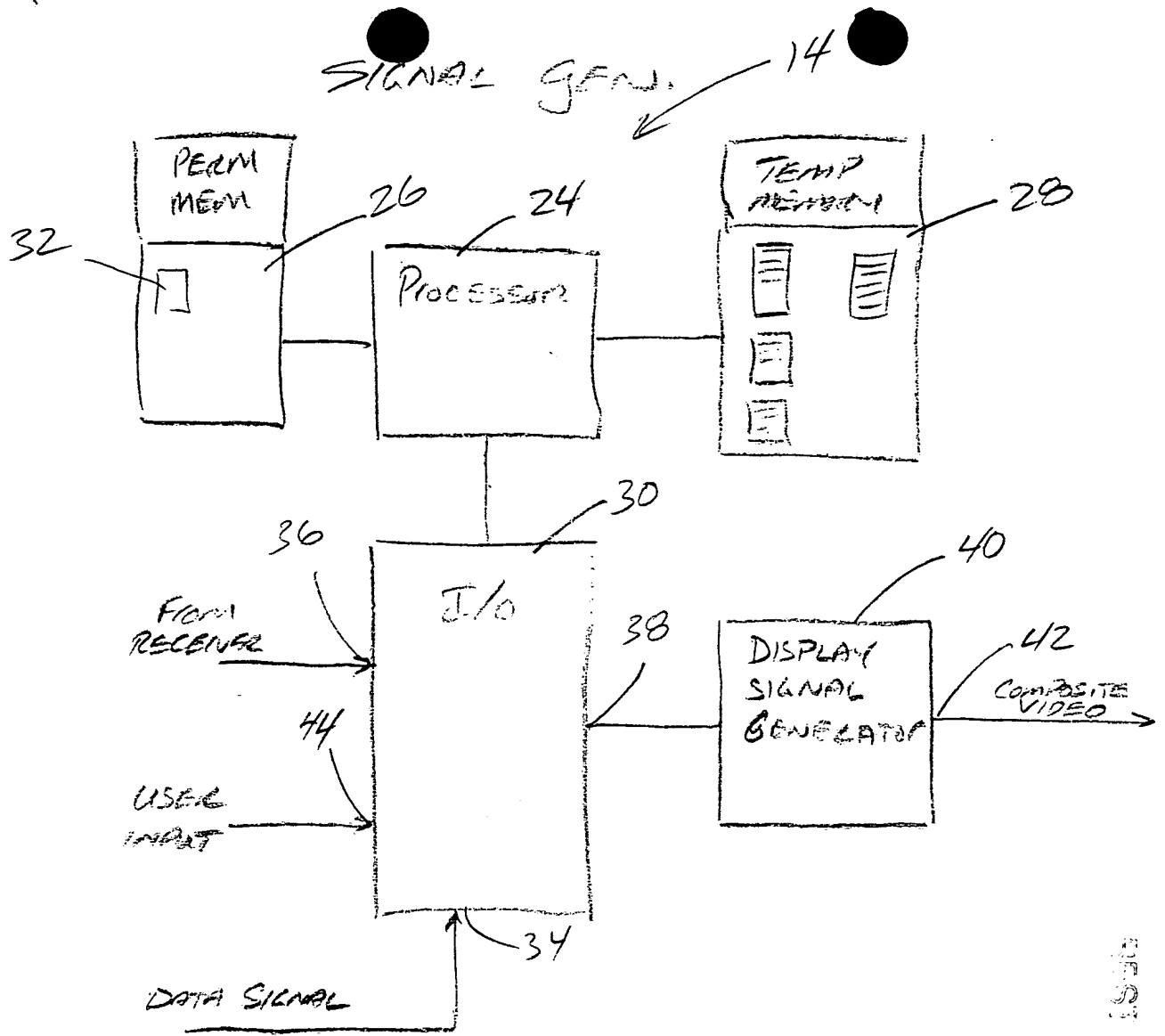


Fig 5

00120-00000000

**ALARM DATA UNIT** ← 50

|                 |                |
|-----------------|----------------|
| DATA UNIT TYPE  | 52             |
| NE ID           | 54             |
| NE NAME         | 56             |
| ALARM ID        | 58             |
| TYPE            | } ← 61<br>← 60 |
| UNIT            |                |
| REASON          |                |
| SEVERITY        |                |
| TIME            |                |
| OPERATOR        |                |
| DISPLAY         |                |
| HOST            |                |
| RESP TIME       |                |
| ROOT CAUSE FLAG | 62             |
| PROBLEM ID      | 64             |

Fig. 6

**Problem Record** ← 130

|                      |     |
|----------------------|-----|
| Problem ID           | 132 |
| Problem Description  | 134 |
| Violation COUNT      | 136 |
| ALARM COUNT          | 138 |
| DEGRADATION COUNT    | 140 |
| COST                 | 142 |
| TIME                 | 144 |
| CAUSE + (CORRECTION) | 146 |
| DOCUMENT REF         | 148 |

Fig 9

**SERVICE VIOLATION DATA UNIT** ← 100

|                  |         |
|------------------|---------|
| DATA UNIT TYPE   | 102     |
| CUSTOMER         | 104     |
| CUST SERVICE     | 106     |
| LEVEL            | 108     |
| METRIC           | 110     |
| DELIVERED        | 112     |
| Agreed           | 114     |
| Penalty / Impact | 116     |
| CONTRACT ID      | 118     |
| TIME             | 119     |
| NE ID            | } ← 120 |
| NE ID            |         |
| Problem ID       | 122     |

Fig 8

**Performance DEGRADATION DATA UNIT** ← 70

|                 |    |
|-----------------|----|
| DATA UNIT TYPE  | 72 |
| NE NAME         | 74 |
| NE ID           | 76 |
| UNIT            | 78 |
| METRIC          | 80 |
| Actual          | 82 |
| Threshold       | 84 |
| NETWORK SERVICE | 86 |
| TIME            | 88 |
| Problem ID      | 90 |

Fig 7

00120" BEECH500

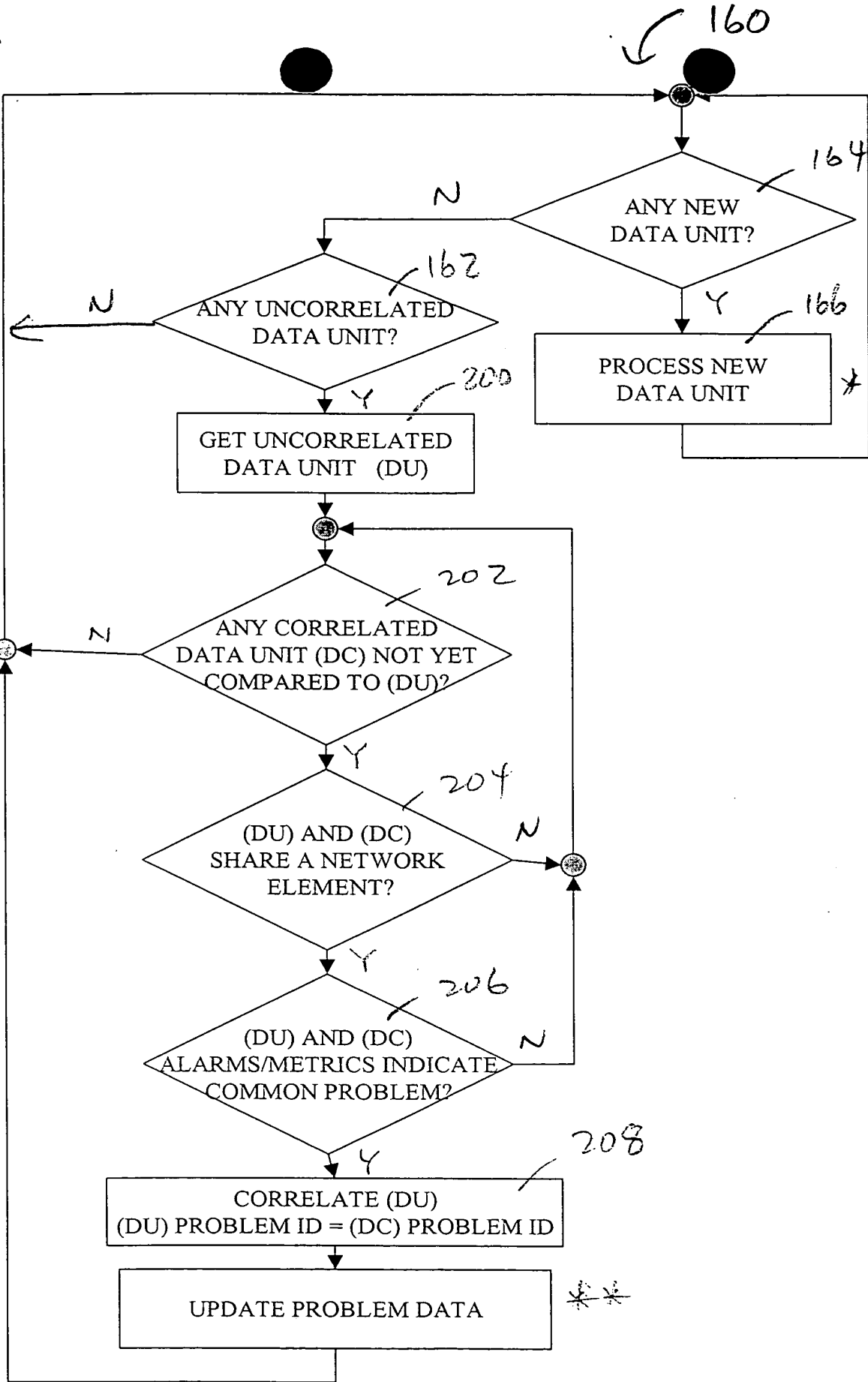


Fig 10

00000000000000000000

BEST AVAILABLE COPY

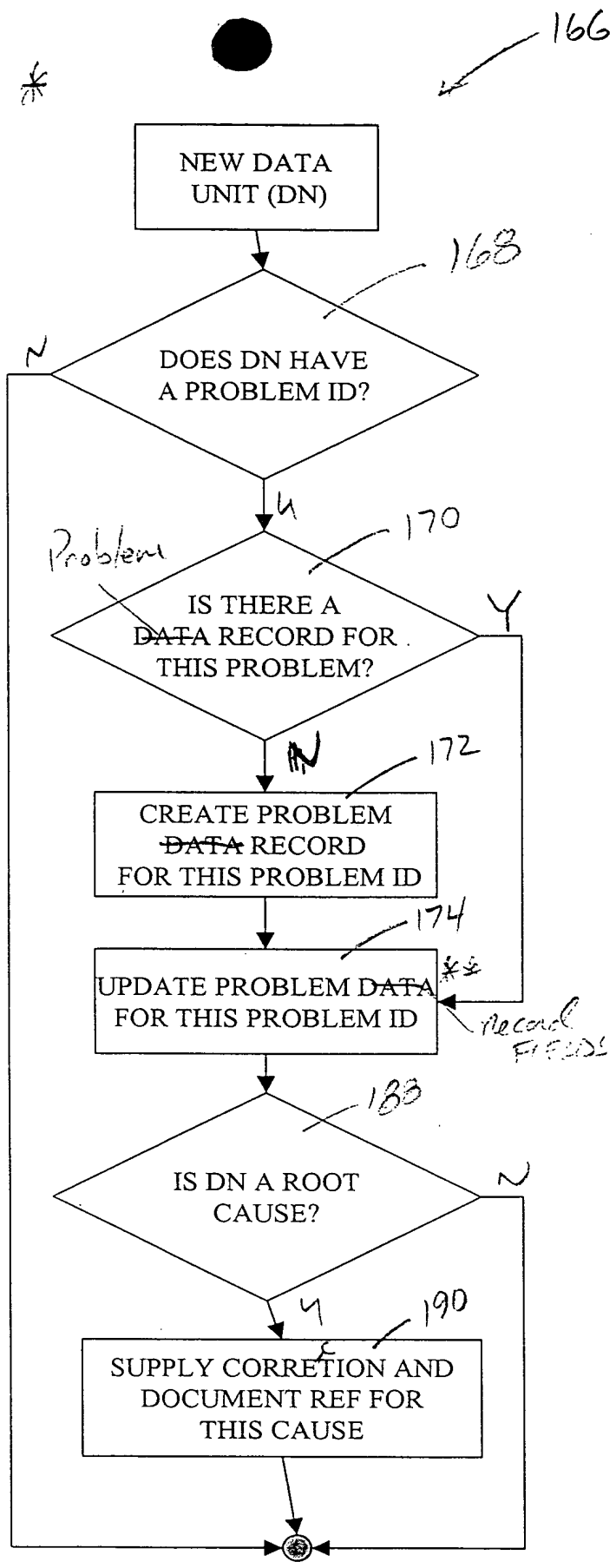


Fig 11



176

GET PROBLEM  
UPDATE  
DATA UNIT (D)

INCREMENT  
CORRESPONDING PROBLEM  
COUNT FIELD

178  
180  
DOES D HAVE A  
PRIOR/OLDER TIME?

182  
UPDATE PROBLEM  
TIME FIELD



184  
DOES D HAVE A  
COST/PENALTY?

186  
ADD COST/PENALTY OF D  
TO PROBLEM COST



Fig 12

00000000000000000000

00000000000000000000

\* \*